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SEED CORN PURCHASING BEHAVIOR OF CORN GROWERS

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Key factors affecting seed corn purchasing habits of farmers were examined. Hybrid performance was the primary differentiating measurement used by growers. Relative importance of alternative information sources for accessing performance was evaluated. Test plots, neighbors and other farmers, university extension personnel, seed corn dealers and advertising was the rank order.

SEED CORN PURCHASING BEHAVIOR OF CORN GROWERS

Introduction

Corn production is important to U. S. agriculture as a cash grain crop and as a livestock feed input. In Ohio, corn has been consistently one of the two most important crops, realizing receipts of approximately $316.4 million and $434.5 million in 1973 and 1974, respectively. These revenues placed corn production second only to soybeans as an income generator for Ohio farmers. To produce crops, farmers in Ohio spend more than $34 million dollars on seed inputs, a part of which is for corn production. Competition for this hybrid seed corn market is divided among a few nationally recognized and many small, local companies.

Objective

The objective of this study was to determine how farmers select their hybrid seed corn. More specifically, factors that affect the seed corn purchasing habits of farmers were examined.

Data Source

A questionnaire was developed to record the farmers' views and actions in the selection of seed corn (Appendix A). Questionnaires were mailed to a randomly selected sample of 1,900 farmers in Ohio. From this sample, 371 usable questionnaires, approximately 19 percent, were returned. The sample was randomly selected from a population of five thousand Ohio farmers by means of a computer generated list of random numbers. These population names of corn growers were compiled primarily from commercial rural county directories. Selected characteristics of the farmers responding to the survey are shown in Table I. These characteristics point out that the sample was representative of the population which focused on

Table I

Characteristics of Farmers Responding to Survey

Characteristics	Number	Mean	Percentage
Gross Income			
over $200,000	34		9.8%
$150,000-$199,000	21		6.0%
$100,000-$149,000	55		15.8%
$ 75,000-$ 99,000	50		14.4%
$ 50,000-$ 74,999	82		23.6%
$ 25,000-$ 49,999	64		18.4%
under $ 15,000	18		5.2%
Education			
Less than high school	35		9.9%
High school graduate	217		61.3%
More than high school	102		28.8%
Farm Enterprise			
Grain	237		64.6%
Dairy	60		16.3%
Hogs	34		9.3%
Beef	23		6.3%
Poultry	2		0.5%
Other	9		2.5%
Seed Corn Dealer (Currently or Ever)			
Yes	76		20.7%
No	291		79.3%
Age			
Under 35	72		19.7%
35-50	143		39.2%
51-65	133		36.4%
over 65	17		4.7%
Tillable Acres Farmed		511.77 acres	
Composite Average of Corn Planted (5 yrs.)		191 acres	
Average Acres Corn Planted 1975		210.4 acres	
Experience in Farming		25.36 years	

SOURCE: SURVEY DATA

cash grain farmers. It is also representative of a market target to which a typical hybrid seed corn firm would market.

INTERPRETATION OF RESULTS

Information Sources

The sources of information that the farmers were asked to rank by importance included the following: neighbors and other farmers (who do not sell seed corn), seed corn dealers, seed corn company salesmen, university extension personnel, farm magazine ads, T.V. and radio ads, company pamphlets and literature, personal test plots, and university sponsored plots.

New Hybrids or Varieties

When a farmer is faced with new purchasing alternatives of hybrids or varieties, comparisons and evaluations seem to be based upon objective and unbiased sources of information. He also prefers a source where visual comparisons can be made. These observations are evident in Table II by the higher ratings given test plots. Next in order are university sponsored plots and company test plots. The higher ratings for these three seem to demonstrate the need for buyers to have a feeling of certainty or confidence in their purchase decision. The frequency of responses for these particular sources also indicates their importance. Almost two-thirds of the respondents ranked personal plots between "somewhat important" and "very important." As indicated in Table II, 86 percent of the surveyed farmers felt that neighbors as a source of information was at least "somewhat important." These neighbors have the ability to provide objective information through the results of their own test plots.

Seed corn dealers and university extension personnel also are important information sources. Dealers, as well as other neighbors and farmers, provide a convenient source of information. University extension personnel are most likely

Table II

Relative Importance of Information Sources For Selection of New Hybrids and Varieties As Used By Corn Growers

Source	Mean	Distribution of Farmers' Responses (%) *						
		1	2	3	4	5	6	7
Personal Test Plots & Results	5.473	10.7	1.3	3.1	11.0	9.1	18.8	46.1
University Sponsored Plots	5.263	10.1	2.4	2.4	13.9	15.1	20.1	36.1
Company Test Plots & Results	5.035	5.6	2.3	5.3	21.1	24.0	19.3	22.5
Neighbors & Other Farmers (who don't sell seed corn)	4.765	6.5	4.2	3.3	33.9	17.6	13.4	21.1
Seed Corn Dealers	4.365	8.6	7.1	7.7	32.9	16.3	13.9	13.4
University Ext. Personnel	4.361	18.5	9.1	16.4	29.2	14.3	7.6	4.9
Seed Corn Co. Salesmen	3.841	16.2	8.7	12.0	31.1	13.2	7.8	11.1
Company Pamphlets & Literature	3.538	18.5	9.1	16.4	29.2	14.3	7.6	4.9
Farm Magazine Ads	2.383	39.8	17.0	19.1	16.7	4.9	1.5	0.9
T.V. & Radio Ads	1.730	61.3	15.6	14.6	6.7	1.3	0.6	--

* 1 = not important; 7 = very important

SOURCE: SURVEY DATA

consulted for their technical expertise and objectivity, however lack of convenience may account for their lower ranking.

Company sales representatives and company pamphlets and literature, although offering a wealth of information, do not seem to be relied upon as heavily as other sources. The objectivity of these sources is probably questioned by the farmer. They function primarily as precursors to further searching efforts by the farmer.

Advertisements through various medias were given the lowest rating. This is to be expected if the purpose of advertising strategy is assumed to stimulate interest and awareness of the existence of a particular brand or company. The stimulation then directs the farmer's search to other informational sources as listed above.

Technical Advice

Test plots ranked highest as sources of information for technical advice (Table III). A possible explanation may be that personal experience and understanding are relied upon heavily and seems to reinforce any outside advice. Viewing a growing situation firsthand may answer technical questions and provide more personal satisfaction than being told the answer by another source.

Next in ranking, and still considered "somewhat important", are human sources such as neighbors and other farmers, university extension personnel, and seed corn dealers.

Company representatives and company pamphlets and literature ranked next in importance and represent a direct offering or service from the firm to the farm. The fact that approximately 35 percent of the respondents felt literature offered by the company was less than "somewhat important" indicates an area that is not being fully utilized. This is an area where smaller seed corn firms have an opportunity to compete with established brands. Likewise, it is an area where

Table III

Relative Importance of Information Sources Used By Corn Growers For Technical Advice

Sources	Mean	Distribution of Farmers' Responses (%)*						
		1	2	3	4	5	6	7
Personal Test Plots	5.564	9.3	1.6	2.5	9.0	11.8	19.0	46.7
University Sponsored Plots	5.475	8.1	1.2	3.9	10.4	13.1	25.1	38.2
Company Test Plots	5.211	5.7	1.2	2.7	16.0	27.4	25.0	22.0
Neighbors & Other Farmers	4.849	7.3	3.6	3.0	29.9	11.4	14.8	23.0
University Ext. Personnel	4.841	9.4	3.7	5.3	22.2	15.3	22.5	21.6
Seed Corn Dealers	4.634	7.6	3.0	6.3	30.5	21.8	15.7	15.7
Seed Corn Co. Salesmen	4.340	10.3	5.2	10.0	28.9	20.1	11.2	14.3
Company Pamphlets & Literature	3.798	14.3	7.5	14.0	30.5	19.3	10.6	3.7
Farm Magazine Ads	2.379	39.7	18.9	14.5	18.6	7.3	0.6	0.3
T.V. & Radio Ads	1.849	55.9	19.0	12.5	10.0	1.9	0.6	--

* 1 = not important; 7 = very important

SOURCE: SURVEY DATA

farmers can utilize the expertise and services offered by a private firm and thereby increase their returns on their investment.

Advertisements were felt to offer little or no information concerning technical advice. Since most ads do not have this as an objective, this low ranking was expected.

Learning About A New Company

Another important use of informational sources develops when a farmer switches from one seed corn company to another. When changing companies, farmers tend to rely on university sponsored plots and neighbors and other farmers most often (Table IV). The objectivity associated with these two sources allows the farmer to compare and contrast various companies and their seed corn.

Use of seed company related information sources received a lower ranking, indicating that farmers consider it to be less objective.

Personal Test Plots

The use of test plots as a source of information for brand comparisons and as a visual source of technical characteristics of a particular variety or brand ranked consistently high. Approximately 46 percent of the survey respondents felt that personal test plots are a very important source of information, and 41 percent said that they plant their own for comparisons.

Services Offered

Knowing which services are of value to the farmer allows a seed corn company to better allocate resources to these services, thereby better satisfying customers' wants and needs. The results shown in Table V indicate that test plots and results, exchange of hybrids, and corn growing information are services that rated between "somewhat important" and "very important". This high ranking for test plots and results is in accord with the ranking given this service as a source of information

Table IV

Relative Importance of Information Sources Used By Corn Growers When Learning About a New Company

Sources	Mean	Distribution of Farmers' Responses (%)*						
		1	2	3	4	5	6	7
University Sponsored Plots	5.620	7.5	1.5	1.5	13.5	8.4	22.2	45.5
Neighbors & Other Farmers	5.471	3.5	1.5	1.5	19.6	19.9	20.2	33.9
Personal Test Plots & Results	5.371	9.7	1.9	3.8	13.2	10.4	19.5	41.5
Company Test Plots & Results	5.067	6.4	1.8	4.2	21.5	21.2	22.1	22.7
University Ext. Personnel	4.907	9.0	2.5	5.6	18.9	19.5	25.1	19.5
Seed Corn Dealers	4.069	12.6	5.7	11.4	32.2	17.7	11.7	8.8
Company Pamphlets & Literature	3.818	13.8	7.5	12.9	35.1	15.0	11.0	4.7
Seed Corn Company Salesmen	3.661	18.4	6.6	11.7	34.5	15.8	8.5	4.4
Farm Magazine Ads	2.716	35.1	12.5	16.3	23.3	8.3	3.5	1.0
T.V. & Radio Ads	2.101	50.5	15.6	15.0	13.4	3.6	1.6	0.3

* 1 = not important; 7 = very important

SOURCE: SURVEY DATA

Table V

Relative Value of Services Offered by Seed Corn Companies As Viewed By The Corn Grower

Services	Mean	Distribution of Farmers' Responses (%)*						
		1	2	3	4	5	6	7
Test Plots & Results	5.491	2.9	0.9	1.7	20.6	18.9	22.4	32.6
Exchange of Hybrids	5.315	5.7	3.3	3.3	17.1	16.8	19.3	34.2
Corn Growing Information	5.203	3.6	0.6	4.2	21.5	25.1	23.9	21.2
Group Technical Meeting	4.789	6.2	3.6	5.0	30.0	20.5	14.8	19.9
Return of Unused Seed	4.555	13.3	6.4	6.1	23.9	10.9	14.8	24.5
Credit Extension Terms	2.747	39.2	11.7	13.0	19.3	6.6	8.2	1.9

* 1 = not important; 7 = very important

SOURCE: SURVEY DATA

Exchange of hybrids ranks highest among services offered by a firm dealing with the actual, tangible product. Return of unused seed and credit extension terms rank lowest in this particular category. The expenditure for seed corn is quite low in comparison to other inputs that the farmer utilizes for his operation. His perceived need for credit terms does not rank highly for seed corn, but does rank higher for other farm inputs according to other studies done in this area.

Overall, the technically oriented services ranked higher among seed corn purchasers than did nontechnical services offered in conjunction with the actual purchase of the tangible product.

Dealer and Salesman Characteristics

Success in marketing seed corn not only depends on the quality of the product, but the perception that the farmer has of the "link" between the company and product. This "link" is the dealer or salesman and may be the catalyst in the farmer's decision making process with respect to seed corn purchase. Both dealers and salesmen rank higher than ads or company pamphlets and literature as an informational source.

The nine dealer and salesmen characteristics considered are listed in Table VI. Honest, reliability, takes a personal interest, and technical knowledge were ranked in the "very important" range by the farmers responding to this survey. Even though the technical expertise of salesmen and dealers may not be initially used as an informational source, these data show that the farmer expects a good salesman or dealer to provide this knowledge.

Seed Corn Characteristics

Ten seed corn characteristics were evaluated by farmers in this survey (Table VII). Most of these are fairly technical and pertain to different varieties

Table VI

Characteristics of Seed Corn Dealers and Salesmen
Important To Corn Growers

Characteristics	Mean	Distribution of Farmers' Responses (%) *						
		1	2	3	4	5	6	7
Honesty	6.761	--	--	0.3	1.6	3.0	10.8	79.7
Reliability	6.715	--	0.3	0.5	1.6	1.6	15.4	75.6
Takes Personal Interest	5.956	1.7	0.3	1.2	11.4	14.0	25.7	45.8
Technical Knowledge	5.936	0.6	0.9	0.9	12.8	16.9	22.7	45.2
Friendliness	5.352	2.7	0.9	3.6	22.5	21.3	20.1	29.0
Located Nearby	4.672	12.2	3.5	5.2	20.9	20.6	17.2	20.3
Successful Farmer	4.512	16.7	3.5	8.2	17.5	14.9	16.1	23.1
Affiliated w/National Co.	4.231	18.0	5.0	9.8	22.2	11.2	15.4	18.3
Has Complete Line of Seed	3.776	24.5	8.2	8.5	22.7	10.8	11.1	14.3

* 1 = not important; 7 = very important

SOURCE: SURVEY DATA

Table VII

Seed Corn Characteristics Important To Corn Growers

Characteristics	Mean	Distribution of Farmers' Responses (%) *						
		1	2	3	4	5	6	7
Yield	6.842	0.3	0.3	--	0.8	0.3	8.9	86.7
Disease Resistance	6.580	--	--	0.3	2.7	5.1	20.6	66.7
Amount of Broken stalks	6.536	--	0.3	0.5	2.4	6.2	20.9	64.8
Tolerance to Insects	6.333	0.6	--	0.5	5.4	9.2	22.5	56.1
Ear Retention	6.228	0.3	0.3	0.3	5.8	13.5	28.4	51.5
Time Requirement for Maturity	5.811	0.8	1.4	2.4	12.7	13.6	27.6	37.7
Test Weight	5.779	1.1	0.3	2.0	15.8	17.2	23.9	39.7
Price	4.563	8.7	5.0	10.2	29.2	13.7	10.8	22.4
Protein Content	4.254	13.6	5.6	8.0	30.5	15.7	10.1	16.6
Field Appearance	4.251	11.5	5.6	10.7	29.6	16.6	13.0	13.0

* 1 = not important; 7 = very important

SOURCE: SURVEY DATA

or numbers. All, except two, of the technical characteristics ranked in the "very important" range with yield receiving the highest qualification. The one nontechnical characteristic, price, plus protein content and field appearance were thought to be "somewhat important".

Farmers also responded to preferences in labeling and packaging of seed corn. The industry is currently packaging seed corn by pounds and by kernel count. Farmers, in general, were indifferent to the manner in which seed corn was packaged. Among those that did show a preference, more farmers preferred the kernel count method over pound measurement.

Summary

1. Previous research has shown that farmers tend to buy more than one brand, with two or three brands comprising the majority of their total seed corn purchases. Data in this survey support this finding. Brand loyalty occurs most often when farmers are selecting

their primary brand of seed corn, while switching of brands sometimes occurs in their second choice, and most likely in their third.

2. In addition to dissatisfaction with present brands, switching from one brand to another may be the result of experimentation with untried brands or new companies. It may also occur because of dealer favoritism. Importance given objective and visual sources of information, such as test plots, tends to confirm this experimentation.

3. Although a majority of the farmers do not regularly plant their own personal test plots for comparison purposes, test plots, in general, whether they be personal, company related, or university sponsored are relied upon for their objective and visual capabilities for information.

4. Neighbors and other farmers are used frequently in conjunction with other sources of information, although many will use this source as a primary factor in their purchase decision. When learning about a new company, seed corn purchasers rank neighbors and other farmers higher than when in need of technical advice or information about different varieties.

5. Although offering a wealth of objective technical information, a lack of convenience makes university extension personnel less important to the farmer than neighbors and other farmers or test plots results.

6. Seed corn dealers, on the other hand, provide a convenient source of information. Even though farmers may feel the profit motive may bias seed corn dealers as an informational source, convenience

and the ability to observe the product growing, make this source at least "somewhat important" to the farmer. Seed corn dealers are also ranked higher than seed corn salesmen or company representatives.

7. Company related informational sources, such as seed corn company salesmen, company literature and pamphlets, and advertisements, were rated relatively low. The exception to this finding were company test plots and their results, with this source ranking third behind other types of test plots. Most company related resources are best viewed as initiators to the farmer's decision making process concerning seed corn purchases, and promoters in the utilization of other informational sources.
8. Advertisements received a low ranking as a source of information.
9. Farmers consider most of the services offered by seed corn companies to be "somewhat important". Company test plots and their results are ranked as being the most important service offered. Other "somewhat important" company services offered in conjunction with their product were exchange of hybrids, corn growing information, group technical meetings, and return of unused seed.
10. Farmers strongly felt that seed corn dealers and salesmen should be honest, reliable, personally interested in their farming operation, and possess a technical knowledge of their product. Even though farmers tended not to rely primarily on this resource for technical information, possession of this knowledge was considered to be an important characteristic.
11. Technical characteristics of seed corn were considered as being highly important in a farmer's brand selection process. Of

particular importance were yield, disease resistance, and the amount of broken stalks. Price, protein content, and field appearance were all ranked lowest, but still believed to be somewhat important.

12. A majority of farmers had attended group technical meetings or seminars sponsored by seed corn companies. The "somewhat important" ranking given the company service indicates needed improvement of the structure and content of these meetings.

13. Farmers tended to be indifferent as to pound or kernel count packaging. However, among those farmers who did show a preference, more preferred the kernel count method.

Marketing Implications For The Seed Corn Firm

Farmers are extremely interested in the performance characteristics of their seed corn brand. Performance is the ultimate determinate in their decision making process.

APPENDIX A

College of Agriculture and Home Economics of the Ohio State University and the United States Department of Agriculture Cooperating

Charles H. Ingraham
Extension Economist
Business Management

QUESTIONNAIRE

1. In which county do you reside? _____

2. How many years have you been actively engaged in farming? _____ years

3. How many tillable acres do you farm? _____ tillable acres

4. Please place a 1 for the most important enterprise on your farm, a 2 for the second most important and so on. Leave blank if it does not apply.

Cash grain	_____	Beef Cattle	_____
Dairy	_____	Poultry	_____
Hogs	_____	Other	_____

5. Are you currently or have you ever been a dealer for any brand of seed corn?
Yes ____ No ____

If yes, specify the brand(s).

1. _____, 2. _____, 3. _____

6. Your age - Under 35____, 35-50____, 51-65____, over 65____.

7. Consider last year's gross income from your farm and place yourself in the proper category.

over $200,000	____	$50,000 - $74,999	____
$150,000 - $199,000	____	$25,000 - $49,999	____
$100,000 - $149,000	____	$15,000 - $24,999	____
$ 75,000 - $ 99,000	____	under $15,000	____

8. How many years of formal education have you completed? _____

9. How many acres of corn did you plant in each of the last 5 years?

1971	_____ acres		
1972	_____ acres	1974	_____ acres
1973	_____ acres	1975	_____ acres

10. Please list, by brand name, the three most important brands of seed corn you have used in each of the last five years and an approximate percentage of use. (EXAMPLE: Pioneer 50%, Acco 25%, and so on.)

	BRAND	%	BRAND	%	BRAND	%
1971	_____	___	_____	___	_____	___
1972	_____	___	_____	___	_____	___
1973	_____	___	_____	___	_____	___
1974	_____	___	_____	___	_____	___
1975	_____	___	_____	___	_____	___

11. Do you plant your own test plots for comparisons? Yes ____ No ____

12. Which sources of information are important or do you use when finding out about new hybrids or varieties? (Circle the number which best indicates the importance of each source of information.)

	Not Important ↓			Somewhat Important ↓			Very Important ↓
Neighbors & Other farmers (who don't sell seed corn)	1	2	3	4	5	6	7
Seed corn dealers	1	2	3	4	5	6	7
Seed corn company salesmen	1	2	3	4	5	6	7
University Extension personnel	1	2	3	4	5	6	7
Farm magazine ads	1	2	3	4	5	6	7
T.V. and radio ads	1	2	3	4	5	6	7
Company pamphlets & literature	1	2	3	4	5	6	7
Personal test plots and results	1	2	3	4	5	6	7
Company test plots and results	1	2	3	4	5	6	7
University sponsored plots	1	2	3	4	5	6	7

13. Which sources of information are important or do you use when you need technical advice about hybrids (standability, moisture content, growing problems, etc.)? (Circle the number which best indicates the importance of each source of information).

	Not Important			Somewhat Important			Very Important
Neighbors & other farmers (who don't sell seed corn)	1	2	3	4	5	6	7
Seed corn dealers	1	2	3	4	5	6	7
Seed corn company salesmen	1	2	3	4	5	6	7
University Extension personnel	1	2	3	4	5	6	7
Farm Magazine ads	1	2	3	4	5	6	7
T.V. and radio ads	1	2	3	4	5	6	7
Company pamphlets & literature	1	2	3	4	5	6	7
Personal test plots and results	1	2	3	4	5	6	7
Company test plots and results	1	2	3	4	5	6	7
University sponsored plots	1	2	3	4	5	6	7

14. If you become dissatisfied with the seed corn company you are now dealing with, what sources of information would be important or would you use to find out about a new company? (Circle the number which best indicates the importance of each source of information.)

	Not Important			Somewhat Important			Very Important
Neighbors & other farmers	1	2	3	4	5	6	7
Seed corn dealers	1	2	3	4	5	6	7
Seed corn company salesmen	1	2	3	4	5	6	7
University Extension personnel	1	2	3	4	5	6	7
Farm magazine ads	1	2	3	4	5	6	7
T.V. and radio ads	1	2	3	4	5	6	7
Company pamphlets & literature	1	2	3	4	5	6	7
Personal test plots and results	1	2	3	4	5	6	7
Company test plots and results	1	2	3	4	5	6	7
University sponsored plots	1	2	3	4	5	6	7

15. How valuable are the following services offered by seed companies to you? (Circle the number which best indicates the value of each service).

	Not Valuable			Somewhat valuable			Very Valuable
Group technical meetings	1	2	3	4	5	6	7
Test plots and results	1	2	3	4	5	6	7
Corn growing information	1	2	3	4	5	6	7
Credit extension terms	1	2	3	4	5	6	7
Return of unused seed	1	2	3	4	5	6	7
Exchange of hybrids or numbers	1	2	3	4	5	6	7

16. How important are these seed corn characteristics? (Circle the number which best indicates the importance of each characteristic).

	Not Important			Somewhat Important			Very Important
Test weight	1	2	3	4	5	6	7
Field appearance	1	2	3	4	5	6	7
Disease Resistance	1	2	3	4	5	6	7
Yield	1	2	3	4	5	6	7
Tolerance to Insects	1	2	3	4	5	6	7
Ear Retention	1	2	3	4	5	6	7
Price	1	2	3	4	5	6	7
Amount of broken stalks	1	2	3	4	5	6	7
Time required for maturity	1	2	3	4	5	6	7
Protein Content	1	2	3	4	5	6	7

17. How important are these dealer and salesman characteristics to you? (Circle the number which best indicates the importance of each characteristic).

	Not Important			Somewhat Important			Very Important
Honesty	1	2	3	4	5	6	7
Reliability	1	2	3	4	5	6	7
Friendliness	1	2	3	4	5	6	7
Takes a personal interest	1	2	3	4	5	6	7
Technical knowledge	1	2	3	4	5	6	7
Has complete line of farm seed	1	2	3	4	5	6	7
Located nearby	1	2	3	4	5	6	7
Successful farmer	1	2	3	4	5	6	7
Affiliated with nationally known Co.	1	2	3	4	5	6	7

18. Assume the following to be true. Your present seed corn is going up in price next year to $33/bushel from $28/bushel. You have been using it the past five years and have been satisfied with its excellent performance. You are also aware of another brand that will cost $28/bushel and has tested out with similar results to yours, but you have never used it yourself.

Would you _____ continue to purchase your present brand?
_____ switch to the other brand?
_____ purchase some of both?

19. Have you ever attended a company-sponsored technical group meeting?

Yes_____ No_____

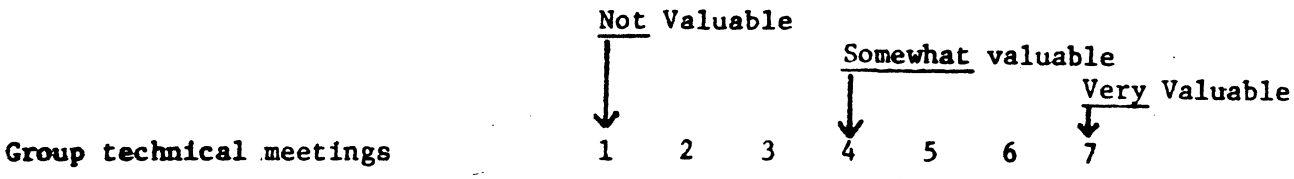
20. Do you prefer seed corn to be packaged in lbs. rather than kernel count?

Yes_____ No_____ Doesn't Matter_____

APPENDIX B

Likert Scale

The Likert scale is an attitude scale as shown below:



This technique is simple to employ and requires no verbalization on the part of the respondent. Each respondent is asked to rate a concept between polar pairs of objectives on a 7.0 scale by circling the number at the point of the scale which he feels most appropriate. Averaging the ranking given by the respondents determines the importance of the particular variable being rated.

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